A SYNOPSIS OF THE RACES OF THE CRESTED TERN, THALASSEUS BERGII (LICHTENSTEIN).

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The identification of United States National Museum material collected in the East India Islands by Dr. W. L. Abbott has involved a canvass of all the races of *Thalasseus bergii*. Some of these have a more or less uncertain status, owing to the divergent views of recent authors;[1] and the following conclusions, based upon a careful study of the questions involved, throws, I hope, a little further light on the relationships and geographical distribution of the various subspecies. Although the specimens examined have not been numerous, only about 45, they are of importance since none of them was available to either Mr. Mathews or Mr. Stresemann, the two authors who have most recently monographed the species. These specimens comprise the collections of the United States National Museum and the Museum of Comparative Zoölogy at Cambridge, Massachusetts, and include birds from most ports of the range of the species, together with the types of *Sterna rectirostris* Peale and *Sterna bergii boreotis* Bangs. While I have been unable to see examples of *Thalasseus bergii thalassinus*, *Thalasseus bergii velox*, *Thalasseus bergii bakeri* or *Thalasseus bergii gwendolenae*, the measurements of these races given by Mr. Stresemann,[2] together with notes which Mr. Mathews, who has had access to Mr. Stresemann's material, has very kindly furnished, have very well supplied the deficiency.

Measurements in this paper are all in millimeters, and those in the tables have been taken as in the author's recent paper on *Butorides virescens*.[3] For the sake of comparison I have added the wing measurements of each race as given by Mr. Stresemann;[4] since, owing to the fact that these are invariably greater than my own, there seems to be indication of a difference in our methods of measuring.

[1] Bangs, Bull. Mus. Comp. Zoöl., vol. 36, 1901, p. 257; Mathews, Birds of Australia, vol. 2, pt. 3, Sept. 20, 1912, pp. 346–347; Stresemann, Novit. Zool., vol. 21, Feb. 25, 1914, pp. 57–59.

[2] Novit. Zool., vol. 21, Feb. 25, 1914, pp. 57–59.

[3] Oberholser, Proc. U. S. Nat. Mus., vol. 42, Aug. 29, 1912, p. 533.

[4] Novit. Zool., vol. 21, Feb. 25, 1914, pp. 57–59.

The names of colors used are from Mr. Ridgway's recent "Color Standards and Color Nomenclature."

The geographical distribution of *Thalasseus bergii* is extensive, and almost wholly littoral, reaching north to the Marshall Islands, the Riu Kiu Islands of Japan, southern China, northern India, the Persian Gulf, and the Red Sea; west to the Red Sea and German Southwest Africa; south to the Cape of Good Hope, Madagascar, Rodriguez Island, Ceylon, Sumatra, Java, southwestern Australia, Tasmania, the Tonga Islands, and the Society Islands; east to the Paumotu Islands, and the Marquesas Islands. It is also of casual occurrence in Palestine. Over its regular range it seems to be resident throughout the year.

This species is really a difficult one, and presents much variation of both size and color to trouble the systematist; but, notwithstanding this, it is possible to recognize at least 11 subspecies, though most of them, it is true, rest on average characters. Much to reduce this number, however, as Mr. Stresemann has done, merely serves to increase rather than to decrease the difficulty; for the latitude of individual variation which such an arrangement allows many of the forms is so great as widely to overlap and seriously impair the assignable characters of some of the other forms which are current and certainly worthy of recognition by name. Although there is considerable individual variation in both size and color in most of the subspecies admitted in the following pages, this variation does not obliterate the usually well-marked average characters of a given race. Notwithstanding this individual variation there seems to be little or no sexual difference, which happpily renders unnecessary separate comparisons of male and female.

The juvenal plumage varies considerably from that of the adult, as follows: Whole pileum streaked with brown; occipital crest dull dark brown; upper parts, including superior wing-coverts, dull brown mottled with white; tail mostly dark brown, the feathers tipped with white; and dark portions of wing-quills dull dark brown.

The present species, together with several others closely allied, are without much doubt generically distinct from the members of the true genus *Sterna*, the type of which is *Sterna hirundo* Linnaeus. The structural differences separating *Sterna bergii* from *Sterna hirundo* consist chiefly in relatively shorter tail, this not over half the length of wing; relatively longer bill, this at least two-elevenths of the length of the wing; stouter bill; less prominent angle of gonys, the height of bill through this angle being decidedly less than at the anterior end of nostril, while in *Sterna* it is practically the same; and the presence of an occipital crest of pointed feathers.

The generic name to be applied to the group including *Sterna bergii* has been somewhat in dispute, for it involves the question of the right

of an author to designate as the type of a polytypic genus, the type of which has remained unfixed, a species which has already become the monotypic type of a genus subsequently instituted. There seems, however, to be little doubt of the wisdom and reasonableness of the affirmative decision in such cases. The nomenclatural situation of the generic group now under our consideration is as follows: Boie was the first author to divide the Linnaean genus *Sterna*, and he, in 1822,[1] proposed the generic name *Thalasseus* for *Sterna caspia* Pallas (=*Hydroprogne caspia* [Pallas]), *Sterna cantiaca* Gmelin (=*Sterna sandvicensis* Latham), and *Sterna anglica* Montagu (=*Gelochelidon nilotica* [Gmelin]). The type of *Thalasseus* was first designated by Wagler in 1832 [2] as *Sterna cantiaca* Gmelin, which species had, however, meanwhile (in 1829) been made the type by monotypy of the genus *Actochelidon* Kaup.[3] The latter generic term must therefore fall as a synonym of *Thalasseus* Boie; as must of course also the later *Pelecanopus* Wagler,[4] the type of which by monotypy is *Sterna pelecanoides* King (=*Thalasseus bergii pelecanoides* [King]). As there seem to be no other applicable names, the proper generic designation of the group comprising *Sterna bergii* is therefore *Thalasseus* Boie. The following species, together with their subspecies, belong to this genus:

Thalasseus bernsteini (Schlegel).
Thalasseus bergii (Lichtenstein).
Thalasseus bengalensis (Lesson) (=*Sterna media* Horsfield not Vieillot).
Thalasseus elegans (Gambel).
Thalasseus eurygnathus (Saunders).
Thalasseus maximus (Boddaert).
Thalasseus sandvicensis (Latham).

The chief differential characters of the recognizable races of *Thalasseus bergii* appear in the following key:

KEY TO THE SUBSPECIES OF THALASSEUS BERGII.

a^1. Size larger (wing averaging more than 350 mm.).
  b^1. Upper parts of a much paler gray.
    c^1. Lighter above..... *Thalasseus bergii bergii* (p. 518).
    c^2. Darker above..... *Thalasseus bergii gwendolenae* (p. 526).
  b^2. Upper parts of a much darker gray.
    c^1. Larger (wing averaging about 380 mm.)..... *Thalasseus bergii bakeri* (p. 519).
    c^2. Smaller (wing averaging less than 370 mm.).
      d^1. Lighter and larger (wing averaging about 368 mm.).
        Thalasseus bergii velox (p. 519).
      d^2. Darker and smaller (wing averaging about 357 mm.).
        Thalasseus bergii edwardsi (p. 520).

[1] Isis, 1822, p. 563.
[2] Idem, 1832, p. 1225.
[3] Skiz. Entwickl.-Gesch. Natürl. Syst. Eur. Thierwelt, 1829, p. 31.
[4] Isis, 1832, p. 277.

a^2. Size smaller (wing averaging less than 350 mm.).
b^1. Upper parts very dark gray..... *Thalasseus bergii cristatus* (p. 520).
b^2. Upper parts medium or light gray.
c^1. Mantle darker.
d^1. Smaller (wing averaging less than 325 mm.).
Thalasseus bergii halodramus (p. 522).
d^2. Larger (wing averaging more than 325 mm.).
e^1. Darker above, and smaller..... *Thalasseus bergii poliocercus* (p. 525).
e^2. Paler above, and larger..... *Thalasseus bergii pelecanoides* (p. 523).
c^1. Mantle paler.
d^1. Larger and darker ..... *Thalasseus bergii rectirostris* (p. 524).
d^2. Smaller and lighter ..... *Thalasseus bergii thalassinus* (p. 519).

THALASSEUS BERGII BERGII (Lichtenstein).

Sterna bergii LICHTENSTEIN, Verz. Doubl. Zool. Mus. Berlin, 1823, p. 80 (Cape of Good Hope, southern Africa).

Sterna longirostris LESSON, Traité d'Orn., 1831, p. 621 (no locality; type-locality designated as Cape of Good Hope by Stresemann, Novit. Zool., vol. 21, February 25, 1914, p. 57).

Subspecific characters.—Of large size and pale coloration.

Measurements.—Wing, 340–372 (average, 351.4) mm.; tail, 175–193 (182.4); exposed culmen, 58–68 (62.2); tarsus, 29–33 (31.6).[1] Wing, 360–370 (364.3).[2]

Geographical distribution.—Coasts of southern Africa, north on the western side to Walfisch Bay, German Southwest Africa, and on the eastern coast to Zanzibar, off German East Africa; and Madagascar.

As with all the races of this species, there is considerable individual variation in the gray of the upper surface, but while some darker birds occur, the average is considerably lighter than in any of the other large subspecies. This form is also larger than any other excepting *Thalasseus bergii velox* and *Thalasseus bergii bakeri*.

Detailed measurements of the specimens of the present race examined are as follows:

Measurements of specimens of Thalasseus bergii bergii.

Museum and No.	Sex.	Locality.	Date.	Collector.	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*
U.S.N.M.111440[3]	.....	Inhambane, Portuguese East Africa.	.....	.....	345	178	58	32
U.S.N.M.111441[3]	.....	.....do.....	.....	.....	350	193	68	31
U.S.N.M.103419[3]	.....	South Africa.....	.....	E. L. Layard..	372	182	61	33
M.C.Z.11663[3]	.....	.....do.....	.....	.....do.....	340	175	66	33
M.C.Z.11662[3]	.....	.....do.....	.....	.....do.....	350	184	58	29

[1] Five specimens, from southern Africa.
[2] Four specimens, measured by Stresemann.
[3] Used in measurement averages on p. 518.

THALASSEUS BERGII THALASSINUS (Stresemann).

Sterna bergii thalassina STRESEMANN, Novit. Zool., vol. 21, February 25, 1914, p. 57 (Goilon, Rodriguez Island).

Subspecific characters.—Similar to *Thalasseus bergii bergii*, but decidedly smaller and somewhat lighter in color.

Measurements.[1]—Wing, 330–336 (average, 333) mm.

Geographical distribution.—The Seychelles Islands, south to the islands of Aldabra and Rodriguez.

Although the original series was small and we have nothing to add, this race is apparently recognizable. It is, however, in color very close to *Thalasseus bergii rectirostris*, and in size practically identical with *Thalasseus bergii cristatus;* so that if we unite these two[2] as Stresemann proposes, it would be difficult and somewhat inadvisable to keep *Thalasseus bergii thalassinus* separate.

THALASSEUS BERGII VELOX (Cretzschmar).

Sterna velox CRETZSCHMAR, Rüppell's Atlas Reis. Nördl. Afrika, 1826, p. 21, pl. 13 (coasts of the Red Sea).

Subspecific characters.—Similar to *Thalasseus bergii bergii*, but upper parts decidedly darker.

Measurements.[3]—Wing, 356–380 (average, 368) mm.

Geographical distribution.—Coasts of the Red Sea and Gulf of Aden east to Sokotra Island; casually north in winter to the Sea of Galilee, Palestine.

This is one of the darkest races and needs comparison with only *Thalasseus bergii bakeri*, *Thalasseus bergii edwardsi*, and *Thalasseus bergii cristatus*.

THALASSEUS BERGII BAKERI Mathews.

Thalasseus bergii bakeri MATHEWS, Birds of Australia, vol. 2, pt. 3, September 20, 1912, p. 346 (Mekran coast of southeastern Persia and southwestern Baluchistan).

Subspecific characters.—Similar to *Thalasseus bergii velox*, but larger, and with darker upper parts.

Measurements.[4]—Wing, 374–386 (average, 380.3) mm.

Geographical distribution.—The Konkan coast of northwestern India, northwest to the coasts of the Persian Gulf.

This race appears to be easily recognizable by size alone, for it is by considerable the largest form of the species. Although we have examined no specimens, there is no trouble at all in distinguishing it from all the other dark subspecies, merely from the measurements given by Mr. Stresemann.[5]

[1] Three specimens, measured by Stresemann.
[2] Novit. Zool., vol. 21, Feb. 25, 1914, pp. 58–59.
[3] Five specimens, measured by Stresemann.
[4] Six specimens, measured by Stresemann.
[5] Novit. Zool., vol. 21, Feb. 25, 1914, pp. 57–58.

THALASSEUS BERGII EDWARDSI Mathews.

Thalasseus bergii edwardsi MATHEWS, Birds of Australia, vol. 2, pt. 3, September 20, 1912, p. 347 (Ceylon).

Subspecific characters.—Resembling *Thalasseus bergii bakeri*, but decidedly smaller.

Measurements.—Wing, 347–351 (average, 349) mm.; tail, 162–181 (171.5); exposed culmen, 61.5–65 (63.3); tarsus, 31.5–32.5 (32).[1] Wing, 345–384 (average, 359.6) mm.[2]

Geographical distribution.—The coasts of southern India and of the Bay of Bengal; west to the Laccadive Islands; south to Ceylon and Tenasserim; east to Tenasserim and Burma; and north to the mouth of the Ganges River and the Laccadive Islands.

This race is, in size at least, much nearer *Thalasseus bergii velox* than to *Thalasseus bergii bakeri*, which is geographically adjacent; but it is even smaller than the former, as well as apparently somewhat darker above. The two specimens examined measure as follows:

Measurements of specimens of Thalasseus bergii edwardsi.

Museum and No.	Sex.	Locality.	Date.	Collector.	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*
U.S.N.M. 172885[3]	Male	Bok Pyin, Tenasserim.	Feb. 9, 1900	Dr. W. L. Abbott.	347	162	65.	32.5
U.S.N.M. 172886[3]	Female	do	do	do	351	181	61.5	31.5

THALASSEUS BERGII CRISTATUS (Stephens).

Sterna cristata STEPHENS, Shaw's Gen. Zool., vol. 13, pt. 1, 1826, p. 146 ("China and many of the southeastern islands of Asia." Definitely fixed as China by Mathews, Birds of Australia, vol. 2, pt. 3, September 20, 1912, p. 347).

Sterna bergii boreotis BANGS, Bull. Mus. Comp. Zool., vol. 36, 1901, p. 256 (Ishigaki Island, Riu Kiu Islands, Japan).

Subspecific characters.—Like *Thalasseus bergii edwardsi*, but much smaller.

Measurements.—Wing, 308–344 (average, 325.7) mm.; tail, 135–178 (160.3); exposed culmen, 55–62 (57.3); tarsus, 27–28 (27.6).[4] Wing, 324–344 (average, 333.5) mm.[5]

Geographical distribution.—Coast and islands of southeastern Asia north to Fu Chau, China, and the Riu Kiu Islands, Japan; south-

[1] Two specimens, from Tenasserim.
[2] Seven specimens, measured by Stresemann.
[3] Used in measurement averages on p. 520.
[4] Four specimens, from China, Japan, and the Philippine Islands.
[5] Eleven specimens, measured by Stresemann.

east to the northern and western islands of the Philippine Archipelago; and south probably to Cochin China.

The species has been recorded from the following islands of the Philippine Archipelago, on which it is probably represented by *Thalasseus bergii cristatus*, those islands followed by a query being doubtfully placed under this subspecies: Agutaya, Calamianes, Cuyo, Luzon, Masbate, Palawan, Balabec (?), Panay, Guimaras (?), Romblon, Sibuyan, and Tablas.

The birds from Palawan Island are intermediate between *Thalasseus bergii cristatus* and *Thalasseus bergii pelecanoides*, but are decidedly nearer the former. Mr. Mathews [1] has referred all the Philippine birds to the present race, but while specimens from the northern and southwestern islands are undoubtedly this, those from Mindanao Island and the Sulu group, in the southernmost part of the archipelago, are very much paler and belong to the following apparently undescribed subspecies.

The proper name for the present race is, as Mr. Mathews has indicated,[1] undoubtedly *Sterna cristata* Stephens,[2] based on birds from "China and many of the southeastern islands of Asia." Stephens, in addition to his description, quotes Latham,[3] whose account refers chiefly and properly to the bird from China. The Chinese bird is, furthermore, identical with that of the Riu Kiu Islands recently named *Sterna bergii boreotis* by Mr. Bangs,[4] of which we have examined the type. The specimens we have seen measure as follows:

Measurements of specimens of Thalasseus bergii cristatus.

Museum and No.	Sex.	Locality.	Date.	Collector.	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*
M. C. Z. 37301 [5]	Male	Ishigaki Island, Riu Kiu Islands, Japan.[6]	June 15, 1899	I. Zensaku	344	178	62	28
U.S.N.M. 211263 [5]	Female	Batangas Bay, Luzon Island, Philippine Islands.	June 7, 1908	P. Bartsch	.....	155	56	27.5
U.S.N.M. 201655 [5]	Female	Islet in Malampaya Sound, Palawan Island, Philippine Islands.	Sept. 12, 1906	E. A. Mearns.	308	135	55	27
U.S.N.M. 103421 [5]	.....	Amoy, China	July 4, 1866	R. Swinhoe	325	173	56	28
U.S.N.M. 201654	Female juvenal.	Cuyo Island, Philippine Islands.	Sept. 10, 1906	E. A. Mearns	.....	.....	.....	.....

[1] Birds of Australia, vol. 2, pt. 3, Sept. 20, 1912, p. 347.
[2] Shaw's Gen. Zool., vol. 13, pt. 1, 1826, p. 146.
[3] Gen. Syn. Birds, vol. 3, pt. 2, 1785, p. 351; Index Orn., vol. 2, 1790, p. 804; Gen. Hist. Birds, vol. 10, 1824, p. 101.
[4] Bull. Mus. Comp. Zool., vol. 36, 1901, p. 256.
[5] Used in measurement averages on p. 520.
[6] Type of *Sterna bergii boreotis* Bangs.

THALASSEUS BERGII HALODRAMUS, new subspecies.

Subspecific characters.—Similar to *Thalasseus bergii cristatus*, but upper parts much paler.

Description.—Type, adult male, No. 191382, U.S.N.M.; Pata Island, near Sulu Island, southern Philippine Islands, November 25, 1903; Dr. E. A. Mearns. Forehead white; crown dull white, heavily spotted with fuscous black; an occipital crest of pointed feathers black, many of them slightly tipped with whitish; broad cervical collar white; rest of upper surface gray, between light mouse gray and light neutral gray; tail of the same color, but the feathers white on both webs basally, this on all but the middle pair occupying about two-thirds of their length; terminal portion of outermost rectrices all but the very tip, and most extensively on outer web, dark quaker drab, rather glaucous; wings of same gray as back, the outer webs of secondaries darker, somewhat brownish, the primaries also darker, the outer quills fuscous black; inner webs of greater coverts and of most of secondaries, a narrow margin on inner webs of inner primaries, a broad margin on inner webs of few outer primaries, and bases of all, white; this white pattern extends on outermost primary over the inner half to two-thirds or more of inner vane, and reaches nearly to the tip, leaving a broad band of fuscous black, about 4 to 6 mm. wide next the shaft; on the second and third quills it is somewhat narrower, and ends in a wedge some 55 or 60 mm. from the tip of the feather; sides of head and neck, together with entire lower parts, including the linings of wings, white, but an ante-orbital spot, an orbital ring, and the post-ocular area black, flecked with white.

Measurements.—Wing, 303–327 (average, 315.9 [1]) mm.; tail, 137.5–168 (153.6); exposed culmen, 54–60.5 (57); tarsus, 25–28 (26.7)[2]. Wing, 335.[3]

Geographical distribution.—The southern and southeastern parts of the Philippine Islands. Recorded from the following islands. Mindanao, Pata, Sulu, Tawi Tawi, islets off Sibutu, Siquijor,[4] Negros,[4] Cebu,[4] Bohol,[4] Leyte,[4] and Samar.[4]

It is with considerable hesitation that I venture to name another subspecies in this much-divided species, but there seems to be no other satisfactory disposition to be made of the birds from the southern Philippine Islands. They are clearly not referable to *Thalasseus bergii cristatus;* and to place them under *Thalasseus bergii pelecanoides* is, on account of their very inferior size, almost as much out of the way. These Philippine birds really combine the small size of

[1] Some of these specimens are in somewhat worn plumage; consequently the real average wing measurement should be slightly greater than here given.

[2] Nine specimens, from the Philippine Islands.

[3] One specimen, measured by Stresemann.

[4] No specimens examined from this island, but *Thalasseus bergii halodramus* is the probable form occurring here.

Thalasseus bergii cristatus with the pale coloration of *Thalasseus bergii pelecanoides*. The present race seems to be confined to the southern Philippine Islands.

Measurements of specimens of Thalasseus bergii halodramus.

Museum and No.	Sex.	Locality.	Date.	Collector.	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*
M.C.Z. 41224[1]	Male	Ayala, Mindanao Island, Philippine Islands.	Dec. 10, 1887	E. L. Moseley.	320	167	54	26.5
U.S.N.M. 191905[1]	do	Zamboanga, Mindanao Island, Philippine Islands.	Jan. 28, 1904	E. A. Mearns.	303	140	59	27
U.S.N.M. 191382[1]	do[2]	Pata Island, off Sulu Island, Philippine Islands.[3]	Nov. 25, 1903	do	325	162	60.5	28
U.S.N.M. 191381[1]	Female	do.[3]	do	do	322	168	57.5	27
U.S.N.M. 190573[1]	do	Mati, Mindanao Island, Philippine Islands.[3]	Oct. 23, 1903	do	327	142	56.5	27
U.S.N.M. 190572[1]	do	do	do	do		155	55	25
M.C.Z. 41225[1]	do	Zamboanga, Mindanao Island, Philippine Islands.	Nov. 2, 1887	E. L. Moseley.	303	137.5	56	27.5
U.S.N.M. 200677[1]	do	Three islets off Sibutu Island, Philippine Islands.	Jan. 5, 1906	E. A. Mearns.			57	26
U.S.N.M. 200678[1]	do	do.[3]	do	do	313	157	57.5	26

THALASSEUS BERGII PELECANOIDES (King).

Sterna pelecanoides King, Surv. Intertrop. and Western Coasts Aust., vol. 2, 1827, p. 422 (Australia: i. e., Torres Strait, northern Queensland).

Sterna bergeri [sic] ("Lecht." [lege "Licht."]) Ramsay, Proc. Linn. Soc. New South Wales, 1878, p. 301 (based on "Gould, Bds. Aust. Handbook, II, p. 394, sp. 601") (Torres Strait, northern Queensland).

Subspecific characters.—Similar to *Thalasseus bergii halodramus*, but decidedly larger.

Measurements.—Wing, 323–355 (average, 337.5) mm.; tail, 130–161 (147.7); exposed culmen, 55.5–66.5 (61); tarsus, 24.5–30 (27.6).[4] Wing, 325–361 (343.1).[5]

Geographical distribution.—The East India islands, Melanesia, and northeastern Australia. Resident north to the Marshall Islands, Admiralty Islands, New Guinea, Gilolo Island, Celebes, Borneo, and the Natuna Islands; west to the southern Malay Peninsula and Sumatra; south to Java, Savu Island, the Aru Islands, Queensland, and the island of New Caledonia; and east to the New Hebrides and the Solomon Islands.

[1] Used in measurement averages on p. 522.

[2] Type.

[3] Wing tips slightly worn.

[4] Eight specimens, from the East India islands.

[5] Twenty-nine specimens, from the East India islands, the Admiralty Islands, and the Louisiade Archipelago, measured by Stresemann.

Notwithstanding its great geographical range, this form appears, from our material, not to be divisible into further races. It is in color near *Thalasseus bergii bergii*, but is darker and also considerably smaller.

The *Sterna bergeri* of Ramsay[1] is apparently a *lapsus calami*, or an emendation of *Sterna bergii* Lichtenstein,[2] but has for its basis the *Thalasseus cristatus* of Gould,[3] which is the bird from Torres Strait.

The specimens of this subspecies examined measure as follows:

Measurements of specimens of Thalasseus bergii pelecanoides.

Museum and No.	Sex.	Locality.	Date.	Collector.	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*
U.S.N.M. 219122[4]	Male	Batavia Bay, Java	July 11, 1909	W. Palmer	351	142	66.5	29
U.S.N.M. 171029[4]	do	Pulo Kelong, Anamba Islands.	Aug. 30, 1899	W. L. Abbott.	323	158	59	24.5
U.S.N.M. 171010[4]	do	Pulo Mata, Anamba Islands.	Aug. 28, 1899	do	324	161	60	26.5
U.S.N.M. 219121[4]	Female	Batavia Bay, Java	July 11, 1909	W. Palmer	335	130	62.5	30
U.S.N.M. 180422[4]	do	Tanjong Pingi, Billiton Island.	July 28, 1904	W. L. Abbott.	336.5	160	59.5	29
U.S.N.M. 174653[4]	do	Pulo Laut, Natuna Islands.	Aug. 3, 1900	do	338	132	55.5	27
U.S.N.M. 174652[4]	do	do	do	do	355	139	64	28
U.S.N.M. 220199[4]		Welcome Bay, Bantam, Java.	——, 1910	W. Palmer		159.5	61	27

THALASSEUS BERGII RECTIROSTRIS (Peale).

Sterna rectirostris PEALE, United States Explor. Exped., vol. 8, 1848, p. 281, pl. 75, fig. 2 (Fiji Islands).

Subspecific characters.—Similar to *Thalasseus bergii pelecanoides*, but upper parts paler in both adult and young.

Measurements.—Wing, 332 mm.; tail, 147; exposed culmen, 61; tarsus, 26.5.[5] Wing, 342–362 (average, 349.8).[6]

Geographical distribution.—Polynesia. Resident north to the Phoenix Islands; west to the Fiji Islands; south to the Tonga Islands and the Society Islands; and east to the Paumotu Islands and the Marquesas Islands.

The type of this race, described by Peale,[7] is in juvenal plumage, and has been mounted, but is still in a good state of preservation. Our material, however, is not alone sufficient for the recognition of *Thalasseus bergii rectirostris;* but Mr. Gregory M. Mathews assures me that, after again examining the series available to him, he is still confident of its validity on the characters above given.

[1] Proc. Linn. Soc. New South Wales, 1878, p. 301.
[2] Verz. Doubl. Zool. Mus. Berlin, 1823, p. 80.
[3] Handb. Birds Aust., vol. 2, 1865, p. 394.
[4] Used in measurement averages on p. 523.
[5] One specimen, from the Paumotu Islands.
[6] Five specimens, from the Fiji, Tonga, Union, and Society Islands, measured by Stresemann.
[7] U. S. Explor. Exped., vol. 8, 1848, p. 281, pl. 75, fig. 2.

The specimens examined in the present connection measure as follows:

Measurements of specimens of Thalasseus bergii rectirostris.

Museum and No.	Sex.	Locality.	Date.	Collector.	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*
M.C.Z. 48302[1].....	Female.	Mangareva I., Paumotu Islands.	Feb. 1, 1905	H. B. Bigelow.	332	147	61	26.5
U.S.N.M. 15697....	Juvenal.	Fiji Islands[2].....	.....	U. S. Exploring Expedition.	295	121	40.5	26.5

THALASSEUS BERGII POLIOCERCUS (Gould).

Sterna poliocerca GOULD, Proc. Zool. Soc. Lond., 1837, p. 26 (Tasmania).

Sterna Novæ-Hollandiæ PUCHERAN, Rev. et Mag. Zool., 1850, p. 545 (Cuvier MS.) (Australia) (not Stephens).

[*Pelecanopus*] *nigripennis* BONAPARTE, Comptes Rend. Acad. Sci., vol. 42, 1856, p. 772 (nom. nov. pro *Sterna novaehollandiae* "Cuvier" [i. e., Pucheran]) (Australia[3]).

Subspecific characters.—Similar to *Thalasseus bergii pelecanoides*, but averaging darker and slightly smaller.

Measurements.—Wing, 285–350 (average, 329.7) mm.; tail, 131–179 (156.9); exposed culmen, 55-66 (59.6); tarsus, 26.5–31 (27. 9).[4] Wing, 326–353 (342.1).[5]

Geographical distribution.—Coasts of New South Wales, Victoria, and South Australia, south to Tasmania.

Although this race is very close to *Thalasseus bergii pelecanoides*, in both color and size, it is probably worth keeping separate on the characters given above. It is to be noted that the present form is *darker*, not lighter, than *Thalasseus bergii pelecanoides*, but is really somewhat smaller, as writers have commonly credited it with being. It is, however, paler than either *Thalasseus bergii velox* or *Thalasseus bergii cristatus*, as well as much smaller than the first mentioned. It is darker than *Thalasseus bergii bergii*, and, of course, decidedly smaller.

The name commonly applied to this race, when it is differentiated from *Thalasseus bergii bergii* and *Thalasseus bergii pelecanoides*, is *Sterna bergii poliocerca;* and the subspecific term *poliocerca* is apparently correct, since *Sterna novaehollandiae* Stephens [6] is, as Mr. G. M.

[1] Used in measurements on p. 524.

[2] Type.

[3] Since *Pelecanopus nigripennis* Bonaparte is merely a substitute name for *Sterna novaehollandiae* Pucheran it must have the same type-locality; and therefore Mr. Stresemann's designation of Tasmania as the type-locality (Novit. Zool., vol. 21, Feb. 25, 1914, p. 58), can not stand.

[4] Nine specimens, from Australia and Tasmania.

[5] Thirteen specimens, from southern Australia and Tasmania, measured by Stresemann.

[6] *Sterna Novæ Hollandiæ* Stephens, Shaw's Gen. Zool., vol. 13, pt. 1, 1826, p. 161 (Australia).

Mathews has discovered, properly applicable to the Australian form of *Sterna anaetheta*.

Detailed measurements of specimens examined are as follows:

Measurements of specimens of Thalasseus bergii poliocercus.

Museum and No.	Sex.	Locality.	Date.	Collector.	Wing.	Tail.	Exposed culmen.	Tarsus.
					mm.	*mm.*	*mm.*	*mm.*
U.S.N.M. 71684 [1]	Male	Illawarra, New South Wales, Australia.			350	160	63	28
M. C. Z. 8781 [1]	do	Tasmania		W. Robertson.	334	158	59.5	31
M. C. Z. 8782 [1]	Male?	do		do	340	146	59	30
U.S.N.M. 211896 [1]	Female	Bass Strait, Victoria, Australia.			285	158	55	27.5
M. C. Z. 12018 [1]	Female?	Melbourne, Victoria, Australia.		J. McCoy	332	173	56	27
M. C. Z. 27589	Juvenal.	Tasmania			320	131	43.5	26.5
M. C. Z. 56054 [1]		Australia	Jan. 3, 1897	M. J. Flood	328	131	66	27
M. C. Z. 56055 [1]		do	July 30, 1897	do	320	142	55	26.5
M. C. Z. 56056 [1]		do	Dec. 29, 1896	do	337	179	63	27
M. C. Z. 56057 [1]		do	Feb. 7, 1897	do	331	165	59.5	27

THALASSEUS BERGII GWENDOLENAE (Mathews).

Sterna bergii gwendolenae MATHEWS, Novit. Zool., vol. 18, January 31, 1912, p. 208 (Rockingham, Western Australia).

Subspecific characters.—Like *Thalasseus bergii poliocercus* and *Thalasseus bergii pelecanoides*, but decidedly larger, and with upper parts paler than either.

Measurements.[2]—Wing, 343–377 (average, 360) mm.

Geographical distribution.—Coasts of western and northwestern Australia. Resident, south to southwestern Western Australia, and north to the western part of the Northern Territory (Melville Island).

This form I have not been able to examine, but judging from the descriptions and measurements given by Mr. Mathews [4] and Mr. Stresemann,[3] it is a valid subspecies. Birds from Melville Island in the Northern Territory of Australia, though close in geographical position to the range of *Thalasseus bergii pelecanoides*, are apparently much nearer *Thalasseus bergii gwendolenae*, at least in so far as their size is concerned, and probably are best referred to the latter, as already indicated by Mr. Stresemann,[4] notwithstanding their northern locality, which is, as a matter of fact, not so very far beyond the northern part of Western Australia, whence come other examples of *Thalasseus bergii gwendolenae*. The wings of five specimens from Melville Island, as given by Mr. Stresemann, range from 346 to 365 mm., with an average of 357 mm.

[1] Used in measurement averages on p. 525.

[2] Eight specimens, from Western Australia, measured by Stresemann.

[3] Novit. Zool., vol. 18, Jan. 31, 1912, p. 208; Birds of Australia, vol. 2, pt. 3, Sept. 20, 1912, p. 347.

[4] Novit. Zool., vol. 21, Feb. 25, 1914, p. 59.